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RIPE NCC Submission to ITU Council Working Group – Internet

Summary

On behalf of the Réseaux IP Européens Network Coordination Centre (RIPE NCC), the Regional Internet Registry for Europe, the Middle East, and parts of Central Asia, we would like to express our profound gratitude to the **ITU Council Working Group — Internet** for providing this opportunity for private sector members to contribute to this extremely important Internet discourse.

While multilateral processes, primarily driven by sovereign states, are essential for achieving global consensus and reflecting national priorities, they often fall short in inclusivity. The limited engagement of non-state actors—such as the technical community, private sector, academia, and civil society—can hinder the scope and effectiveness of these processes in addressing the complex technical challenges of Internet governance. Multistakeholder processes, in contrast, offer a richer and more balanced perspective by incorporating diverse expertise and viewpoints. This approach not only enhances the legitimacy and effectiveness of governance outcomes but also ensures that the policies developed are agile enough to adapt to the rapid pace of technological advancements.

To develop and strengthen the Internet, multistakeholder processes should be leveraged to foster meaningful connectivity, secure and resilient infrastructure, and inclusive policy environments. Promoting the adoption of critical Internet technologies like the deployment of IPv6, enhancing routing security through RPKI, and offering capacity building are essential components of this effort. The RIPE NCC's initiatives in these areas exemplify good practices in promoting robust Internet infrastructure. These include offering extensive capacity building, advocating for favourable policy environments, and fostering collaboration among stakeholders.

Additionally, promoting international multistakeholder cooperation through shared goals, mutual respect and trust, and continuous dialogue and engagement can significantly enhance the developmental aspects of the Internet, ensuring a secure, stable, and inclusive digital future for all.

RIPE NCC
RIPE NETWORK COORDINATION CENTRE

1. How relevant multilateral and multistakeholder processes, including but not limited to U.N.-based processes such as Summit of the Future, WSIS+20 and the IGF, could address aspects related to Internet development?

While multilateral processes bring together sovereign states to address global issues and often reflect a consensus that respects national priorities, they can sometimes exhibit certain limitations. Notably, these processes might lack inclusivity by not sufficiently incorporating non-state actors such as technical communities, the private sector, academics and civil society, whose contributions are crucial for Internet development. This can result in a limited scope of expertise that might not fully address the complex, technical nature of global challenges such as Internet governance. Additionally, the emphasis on political consensus among nations can sometimes lead to slower or no decision-making, which may not be agile enough to keep pace with rapid technological advancements.

In contrast, multistakeholder processes involving diverse voices and areas of expertise often enjoy a richer, more balanced perspective and are generally perceived as more legitimate and effective in addressing the specific needs of a globally interconnected Internet. These processes can adapt more quickly to technological changes and incorporate a broader range of viewpoints, leading to more holistic and sustainable Internet governance outcomes.

Internet Creation and Evolution through Multistakeholderism

The creation and evolution of the Internet have been significantly shaped by the multistakeholder model, which involves various stakeholders in global Internet governance. This model ensures that no single entity has complete control over the Internet, promoting a more accessible and democratically governed resource. Through open forums such as the Internet Governance Forum (IGF), stakeholders, including governments, private sector entities, civil society, technical communities, and academic institutions, collaborate to address and solve pressing Internet issues. This collaborative approach has facilitated the development of resilient and scalable Internet infrastructure, accommodating the rapid growth and technological advancements that characterise the Internet's evolution.

The RIPE NCC and Its Multistakeholder Governance

The RIPE NCC (Réseaux IP Européens Network Coordination Centre) is one of five Regional Internet Registries (RIRs) worldwide, responsible for allocating and administering Internet number resources (IP addresses and Autonomous System Numbers) across Europe, the Middle East, and parts of Central Asia. As a neutral non-profit membership organisation, the RIPE NCC is committed to supporting the infrastructure of the Internet through technical coordination. Its multistakeholder governance model is fundamentally open, inclusive, and bottom-up, involving a wide range of stakeholders from different sectors such as telecommunications, network operation, academia, the private sector, and governments. This inclusive approach ensures that various perspectives contribute to the policy-making process.

2. What are the challenges and opportunities, good practices and favorable policy environments to strengthen the Internet, including in areas such as:

Fostering Meaningful Connectivity

In today's landscape, economic and social progress depend more than ever on connectivity. The depletion of IPv4 addresses has placed substantial pressure on governments, mobile operators, and ISPs to pioneer the adoption of the next-generation Internet Protocol, IPv6. As the ITU estimates, this transition is vital in connecting the remaining 2.7 billion individuals who still need to be online.

The RIPE NCC is committed to fostering ongoing IPv6 initiatives across its service region. We stand ready to provide unwavering support for deploying this critical enabling technology to connect those who remain unconnected. The RIPE NCC also works towards meaningful connectivity by supporting the establishment of more Internet Exchange Points (IXPs) and promoting local peering relationships. This enhances the quality of Internet access by reducing latency and increasing bandwidth availability.

Secure and Resilient Internet

The RIPE NCC's commitment to a secure and resilient Internet is manifested through its robust routing security program and the strategic promotion of IPv6 security adoption.

Challenges: One of the persistent challenges in routing security is the threat of route hijacks and spoofing. The RIPE NCC addresses these through the deployment of Resource Public Key Infrastructure (RPKI) to secure Internet routing. This tool helps network operators validate the legitimacy of routing announcements, preventing malicious rerouting of traffic, which could disrupt Internet connectivity. Additionally, the transition to IPv6 requires ensuring that new network configurations maintain or enhance security levels without inheriting vulnerabilities from the previous version. The RIPE NCC helps network operators achieve this through IPv6 security training.

Opportunities: RPKI not only enhances security but also improves trust in Internet transactions by authenticating route legitimacy. The extensive address space of IPv6 directly supports the growth of the Internet of Things (IoT) and other emerging technologies by providing a vast number of IP addresses, which is essential for the secure and efficient operation of modern networks. IPv6 inherently includes security improvements such as better support for IPsec (Internet Protocol Security), which is optional in IPv4 but foundational in IPv6, offering encryption and authentication at the IP layer.

Good Practices: The RIPE NCC advocates for comprehensive adoption of RPKI and IPv6 by collaborating with regulators and operators and offering extensive training programmes, webinars, and educational materials to increase operational capacity. This includes detailed guidance on how to create Route Origin Authorizations (ROAs) for address space, deploy RPKI validators, and configure routers to use RPKI data when making routing decisions.

Favourable Policy Environments: Advocacy for reduced regulatory barriers to the adoption of routing security measures like RPKI is crucial. The RIPE NCC plays a proactive role in policy discussions, pushing for frameworks that support widespread implementation of these technologies. Similarly, for IPv6, fostering environments that mandate or incentivise its adoption can

accelerate its uptake, furthering the goals of enhanced network security and resilience amidst digital expansion.

In summary, the RIPE NCC's routing security and IPv6 adoption initiatives are pivotal to building a more secure, stable, and scalable Internet. These efforts address current technological challenges and prepare digital infrastructure for future demands.

IPv6 Deployment

The RIPE NCC has made significant achievements in promoting, supporting and deploying IPv6, which is crucial for the continued growth and sustainability of the Internet. Our efforts include offering training sessions, tools, and guidelines that help organisations understand and implement IPv6. We also provide detailed statistics and monitoring tools through services like RIPEstat, which enable members and the wider community to track IPv6 adoption across different regions. Moreover, we offer policymakers and regulators the needed technical expertise to support the development of their IPv6 national strategies, including national IPv6 Task Forces. This comprehensive support ensures that the RIPE NCC’s members, the Internet community, and governments are well-equipped for a smooth transition to IPv6, reflecting their commitment to advancing global Internet infrastructure.

Challenges: One of the primary challenges in the adoption of IPv6 is incompatibility with IPv4 and legacy infrastructure. Many existing networks and systems are built around IPv4, making the migration to IPv6 complex and resource-intensive. Furthermore, there is a notable knowledge and skills gap within many organisations, which slows adoption rates. Getting the decision makers on board also can be a significant hurdle.

Opportunities: IPv6 offers vast improvements over IPv4, including a nearly limitless address space, which is essential for the burgeoning IoT and smart devices market. This expanded address capacity enables a more robust and scalable network infrastructure, which is crucial for supporting emerging technologies like 5G, 6G, AI and smart cities. Moreover, IPv6 inherently supports more future-proof and efficient routing and improved network service quality.

Good Practices: Adopting best practices for IPv6 implementation is vital for overcoming its challenges. These include developing comprehensive migration plans that detail the transition process and expected outcomes. It is a good practice to push towards IPv6-only or IPv6-mostly networks when possible, especially for new services and deployments. Dual-stack deployments can be used when absolutely needed. In some cases, this could be the first step towards transitioning to IPv6 with minimal disruptions to the existing IPv4 networks. It is also critical to invest in training and skill development for IT staff to manage the new protocol effectively. Collaboration with industry partners and governments can further ease the transition, as described in the next section.

Favourable Policy Environments: Governments and regulatory bodies play a pivotal role in IPv6 adoption by setting soft regulations that mandate or encourage its uptake. These policies can drive adoption by specifying timelines and compliance requirements for IPv6 readiness in public and private sector networks. Additionally, incentives for businesses to transition to IPv6 can accelerate adoption rates.

In conclusion, while transitioning to IPv6 poses challenges, it also offers substantial opportunities for enhanced global connectivity. By adopting strategic approaches and leveraging collaborative efforts, stakeholders can address the technical, security, and operational challenges, paving the way for a more connected and technologically advanced future.

Satellite Communication

The RIPE NCC also evaluates the integration of satellite communications to extend connectivity to underserved areas. The synergy between traditional and new technologies is essential to achieving universal access.

Satellite broadband can bring broadband services to rural and remote areas where no networks are available, though affordability remains a crucial factor to facilitating uptake in these areas. Broadband can also provide resilient emergency services in disaster or crisis situations. However, while satellite services can bridge the digital divide, they cannot currently replace the performance of ground-based networks.

Promoting Digital Inclusion and Skills

The RIPE NCC is deeply committed to promoting digital inclusion and enhancing the skills necessary for navigating and managing modern Internet infrastructure. This commitment is reflected in our extensive array of training programmes, certifications, and resources aimed at empowering communities and stakeholders across our service region.

Empowering Through Education and Skills Development: The RIPE NCC offers a broad spectrum of educational and training initiatives through the RIPE NCC Academy. This platform provides structured courses across various topics, including IPv6, routing security, Internet governance and others, which are critical for digital literacy in today's technology landscape. The Academy is available online for free, helping to close the technical skills gap in the Internet community.

Certified Professionals Programme: The RIPE NCC Certified Professionals programme is a cornerstone of the RIPE NCC's efforts to validate the skills and knowledge of Internet professionals. By offering certifications that are aligned with the latest best practices and technical standards, the RIPE NCC ensures that network operators, engineers, and IT professionals are equipped to handle the complexities of modern Internet technologies and security challenges. Participants in this programme gain knowledge and verifiable credentials that demonstrate their expertise in specific areas like IPv6.

Supporting Broad Community Engagement: The RIPE NCC's approach goes beyond training to include support for broader community engagement through initiatives such as hosting regional meetings, government roundtables, open houses and webinars. These events provide platforms for live interaction, discussion, and sharing of best practices among the Internet governance community. Such forums not only foster learning and development but also enhance community collaboration and the sharing of critical information across borders.

The RIPE NCC’s educational efforts not only enhance individual competencies but also contribute to a more inclusive digital world. By equipping people with the necessary skills and knowledge, the RIPE NCC enhances the overall resilience and development of the Internet.

Multi-Stakeholder Participation

The RIPE NCC's approach to fostering multi-stakeholder participation is deeply embedded in its policy development process, which is open and inclusive, allowing a diverse range of stakeholders to engage in shaping the policies that govern the Internet's technical infrastructure. This process exemplifies a robust model of collaborative governance, reflecting a wide spectrum of interests and perspectives from various sectors involved in Internet management and governance.

Opportunities: The multi-stakeholder approach presents significant opportunities for inclusive policy-making. It allows for the integration of comprehensive insights that enhance policy relevance and effectiveness, leading to policies that are more widely accepted. Additionally, this model encourages transparency and accountability, essential qualities that build trust among stakeholders and the broader community.

Good Practices: RIPE NCC adheres to several good practices that make its multi-stakeholder participation effective. These include hosting regional and larger RIPE Meetings, organising online open houses, and facilitating a transparent policy-making process where anyone can submit, discuss, and refine policy proposals. Regular training sessions and webinars further support stakeholder engagement by educating participants on how to contribute effectively to the policy development process.

Favourable Policy Environments: Creating environments that support multi-stakeholder participation involves encouraging governments and organisations to recognise and adopt this model. Moreover, support mechanisms such as funding, training, and information access can enhance the ability of less-resourced groups to participate effectively and

ensure policies are well-rounded and effectively address the needs of the global Internet community.

Public and Private Sector Investment

We encourage investment in robust Internet infrastructure through advocacy and partnerships, emphasising the role of stable and secure Internet services as foundational to economic and social development.

3. How can we promote international multistakeholder cooperation on public policy issues that are focused on promoting the developmental aspects of the Internet?

Governments should consider a multifaceted approach that emphasises inclusivity, transparency, and shared objectives to promote international multistakeholder cooperation on public policy issues related to Internet development.

Establishing Clear and Shared Goals: Effective multistakeholder cooperation hinges on having clear, shared goals that align the interests of all parties involved. This focus helps to maintain momentum and ensures that all stakeholders are working towards common outcomes.

Creating Partnerships and Initiatives with Technical Community Organisations and other stakeholders to achieve universal connectivity, especially in developing countries: Governments and International organisations should forge partnerships with technical community organisations and other stakeholders through collaborative initiatives to achieve universal connectivity.

For instance, the RIPE NCC has committed to the ITU Partner2Connect initiative, which aims to raise $100 billion by 2026 to enhance global Internet connectivity. The RIPE NCC contributes technical expertise, support, and capacity-building efforts, recognising that bridging the digital divide requires the combined efforts of the governments and various stakeholders, as no single entity can accomplish this alone.

You can find more information on this initiative here:
https://www.ripe.net/media/documents/The_RIPE_NCC_Pledges_to_Partners2Connect_Digital_Coalition_Initiative.pdf

Fostering a Culture of Mutual Respect: A culture of mutual respect among stakeholders is crucial. This includes acknowledging and valuing the input of all participants, ensuring that each stakeholder's perspective is considered. A good example is an effective coordination and facilitation role by neutral organisations such as the RIPE NCC.

Ensuring Inclusiveness and Transparency: Inclusiveness and transparency are fundamental to gaining the trust and commitment of all stakeholders. Processes must be open to all relevant parties, with mechanisms in place to support meaningful participation from underrepresented groups. This might involve capacity-building initiatives to ensure that all stakeholders can contribute effectively.

Creating Opportunities for Continuous Engagement: Continuous engagement and dialogue among stakeholders are vital. Forums like WSIS, IGF and other UN and ITU meetings and conferences provide platforms where stakeholders can regularly discuss, update, and refine their approaches to Internet governance, ensuring ongoing relevance and responsiveness to emerging challenges.

The RIPE NCC's engagement with governments and intergovernmental organisations exemplifies its commitment to fostering a secure, stable and sustainable Internet. Through its dedicated government roundtables and meetings, the RIPE NCC contributes technical expertise and offers capacity-building to influence global Internet policies supporting sustainable and inclusive Internet growth.

Participation in key international discussions, such as the WSIS process, the Internet Governance Forum, ITU and various UN meetings and conferences, allows the RIPE NCC to advocate for the operational needs of Internet infrastructure, ensuring that global policies reflect the technical realities of the Internet’s growth and evolution. These efforts highlight the RIPE NCC's role as a leader in promoting multistakeholder dialogue and cooperation, which is essential for the ongoing development of a globally connected Internet.